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TRANSMITTAL OF APPEAL BRIEF	Docket No. 09432/168002

In re Application of: David Llewellyn Mallis

Application No.	Filing Date	Examiner	Group Art Unit
09/843,560-Conf. #9436	April 26, 2001	A. D. Tugbang	3729

Invention: TUBULAR JOINT WEAR INDICATOR

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: October 22, 2004 .

The fee for filing this Appeal Brief is $ 500.00 .

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Dated: April 1, 2005

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Dated: April 1, 2005 Signature: _____ (Michelle Hayden)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : David L. MALLIS
Serial No.: 09/843,560
Filed : April 26, 2001
Title : Tubular Joint Wear Indicator

Art Unit : 3729
Examiner : Anthony D. Tugbang

Assistant Commissioner for Patents
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Alexandria, VA 22313-1450

APPELLANT'S BRIEF UNDER 37 C.F.R. § 1.192

Dear Sir:

Pursuant to 37 C.F.R. § 1.192, please consider the following Appellant's Brief in the referenced Application currently before the Board of Patent Appeals and Interferences.

TABLE OF CONTENTS

TABLE OF AUTHORITIES

CASES

STATUTES

I. Real Party in Interest

The real party in interest in the referenced Application is Hydril Company LP ("Hydril"). While no Assignment has been recorded with the United States Patent and Trademark Office, Hydril owns the entire right in the present Application pursuant to the Inventor's employment therewith.

II. Related Appeals and Interferences

To the best of the knowledge of the Appellant and the Appellant's legal representative, there are no other appeals or interferences that will directly affect, be affected by, or have a bearing on the decision of the Board of Patent Appeals and Interferences ("the Board") in this appeal.

III. Status of Claims

The present Application, Serial No. 09/843,560 ("the '560 Application") was filed on April 26, 2001. As filed, the '560 Application included claims 1–19, of which claims 1, 10, and 19 were independent claims. Dependant claim 20 was added by amendment on March 3, 2003. Independent claim 21 and dependant claims 22 and 23 were added by amendment on June 24, 2003. Claim 23 was canceled and dependant claim 24 was added by amendment dated February 2, 2004. Claims 1–22 and 24 are presently pending in the '560 Application. All pending claims were finally rejected in an Office Action mailed on May 10, 2004. A Notice of Appeal was filed on October 22, 2004.

Claims 1–22, and 24 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,438,953 ("Timme").

IV. Status of Amendments

All amendments submitted to the Examiner during prosecution have been entered in the record. The claims of record are presented in Appendix A.

V. Summary of the Invention

The invention claimed in the '560 Application relates to a threaded pipe connection that includes a pin member having external threads increasing in width in one direction and a box member having internal threads increasing in width in an opposition direction. (Application page 2, ¶ 6). The pin member and the box member are configured such that the external and internal threads thereof move into engagement upon make-up of the pipe connection. (*Id.*) Furthermore, the claimed invention includes a wear indicator that extends from either a shoulder of the box member or a shoulder of the pin member. (*Id.*)

Referring to Figure 1 of the '560 Application (reproduced below), a male threaded pin connection **10** is rotatably engaged within a female threaded box connection **12**. (Application page 2, ¶ 3).

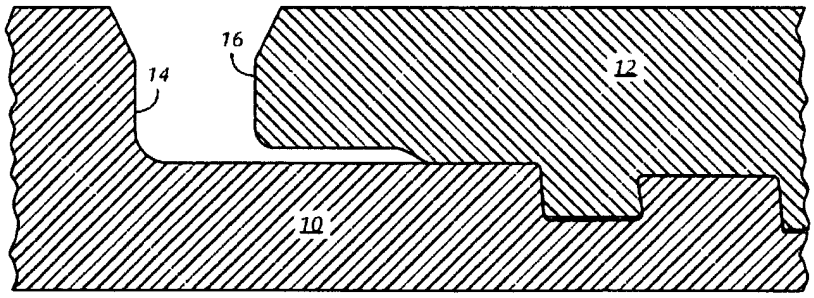

FIG. 1
(Prior Art)

The "wedge" type threads are constructed such that threads of pin **10** increase in width in one direction and threads of box **12** increase in width in another, opposite, direction. (Application

pages 1-2, ¶ 3). As such, when components of the threaded connection are newly manufactured and fully tightened, external shoulder **14** of pin member **10** does not come into contact with external shoulder **16** of box member **12** as shown. (Application page 2, ¶ 3).

Referring now to Figure 2 of the '560 Application (reproduced below), a threaded connection between a male pin member **10** and a female box member **12** is shown wherein the connection is worn beyond allowable limits. (Application page 2, ¶ 3-4). Over time and through numerous make-up and break-out cycles, thread profiles of wedge threads within box **12** and upon pin **10** deform such that external shoulders **14** and **16** meet one another when the connection is made-up. (*Id.*)

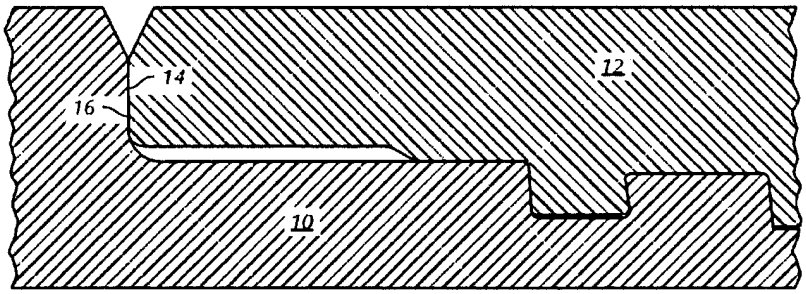

FIG. 2
(Prior Art)

Once a connection reaches the state shown in Figure 2, it must be replaced or re-machined before it can be relied upon in service. (Application page 2, ¶ 4). Formerly, a function gauge was used to record the amount of standoff between shoulders **14** and **16** when the connection was tightened by hand to indicate the amount of thread wear and deformation. (Application page 2, ¶ 5). However, this method is unreliable in that the amount of standoff between shoulders **14** and **16** when tightened by hand is not necessarily representative of the amount of interference between pin **10** and box **12** when torqued using power equipment. (*Id.*) As such, shoulders **14** and **16** can "gauge" within specifications when hand-tightened off-site, but abut or otherwise be

out of specification once tightened to an operating torque on-site. (*Id.*) When shoulders **14** and **16** abut, it is difficult to tell if wedge threads internal to the connection are experiencing enough interference to form a proper pressure seal. (*Id.*) As such, once shoulders **14** and **16** begin to abut one another, components of the connection must be set aside and other components used, resulting in a costly delay to operations. (Application page 2, ¶ 4).

Figures 3 and 4 of the '560 Application (reproduced below) represent an embodiment of a threaded connection in accordance with the invention of the '560 Application that includes a wear indicator to indicate compliance within connection wear specifications. (Application page 5, ¶ 16). Similar to the connections shown in Figures 1 and 2, the connection includes an externally threaded male pin connection **10** and an internally threaded female box connection **12**. (Application page 5, ¶ 18). However, in Figure 3, a wear indicator **18** projects from external shoulder **14** of pin connection **10**. (Application page 5, ¶ 17). Wear indicator **18** is configured to come into contact with external shoulder **16** when the connection is approaching the end of its useful life and is visible when the connection is made-up. (*Id.*)

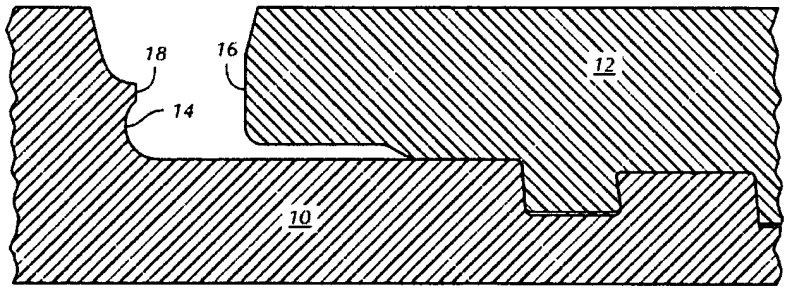

FIG. 3

Referring now to Figure 4, the connection of Figure 3 is shown wherein the threads of pin **10** and box **12** are sufficiently deformed to allow shoulder **16** of box **12** to come into contact with wear indicator **18**. (Application pages 5-6, ¶ 18).

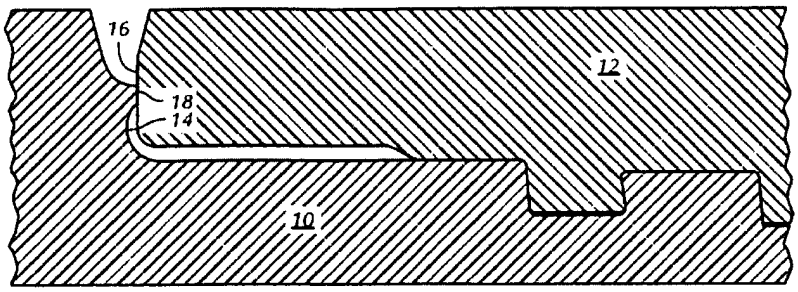

FIG. 4

When shoulder **16** first engages wear indicator **18**, the connection is approaching the limit of its lifespan. (Application page 6, ¶ 18). Over a few additional make-up and break-out cycles, shoulder **16** fully engages wear indicator **18** and the connection is required to be withdrawn from service and remanufactured. (*Id.*) Because shoulder **16** never reaches shoulder **14**, the threaded connection is removed from service prior to any absolute need for replacement. (Application page 7, ¶ 21).

Figure 5 of the '560 Application (reproduced below) shows an alternative embodiment wherein the wear indicator **18** is located on external shoulder **16** of internally threaded box connector **12**. (Application page 6, ¶ 19).

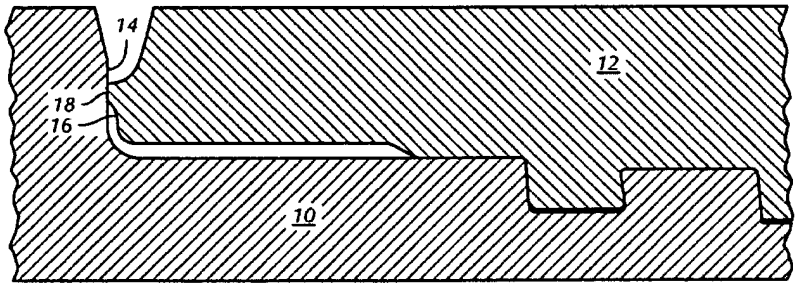

FIG. 5

Wear indicator **18** of Figure 5 is configured to contact external shoulder **14** of externally threaded pin connector **10** when threads of connection between pin **10** and box **12** are sufficiently worn and deformed so as to require replacement. (*Id.*)

VI. Issue

The sole issue presented on appeal is whether the Timme patent discloses all of the limitations of claims 1-22 and 24 as required to form a proper rejection under 35 U.S.C. §102(b).

VII. Grouping of Claims

For the purposes of this Appeal, the claims are grouped as follows:

"Group I" – Claims 1-20 stand or fall together;

"Group II" – Claims 21, 22, and 24 stand or fall together.

The Group I and II claims are argued separately below.

VIII. Argument

Claims 1-22 and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Timme patent. Appellant respectfully submits that the rejection is untenable for the reasons set forth below.

Under 35 U.S.C. §102(b), a claim in a patent application may be rejected if it is patented or described in a printed publication in this or a foreign country, or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States. 35 U.S.C. § 102(b). Furthermore:

> "Anticipation under 35 U.S.C. § 102 means lack of novelty, and is a question of fact. To anticipate, *every* element and limitation of the claimed invention *must* be found in a *single* prior art reference, arranged as in the claim."

Brown v. 3M, 265 F.3d 1349, 1351 (Fed. Cir. 2001) (emphasis added). The Federal Circuit has held repeatedly that anticipation requires disclosure of each and every element of the claimed invention in a single prior art reference. *See, e.g., Schering Corp. v. Geneva Pharms.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003); *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677 (Fed.

Cir. 1988); *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1574 (Fed. Cir. 1986). Appellant respectfully asserts the Timme patent does not disclose each and every element of the invention as claimed in claims 1-22 and 24.

A. The Pin and Box Member Limitations (Group I and II Claims)

Timme does not disclose the limitations relating to the pin and box members recited in each claim of the '560 Application. Particularly, all claims (1-22 and 24) require a pin member having external threads increasing in width in one direction. Furthermore, all claims require a box member having internal threads increasing in width in an opposite direction. In the art of threaded tubulars, particularly in tubulars used in oilfield applications, such a thread configuration is known as a "wedge thread." The Timme patent does not disclose or suggest threads increasing in width in any direction. Instead, the Timme patent discloses threads that are tapered (*i.e.*, those having a frusta-conical shape along their length). (Timme column 2, lines 19-21). As such, the Timme patent discloses threads increasing or decreasing in *diameter* and does not disclose or suggest threads increasing in *width* as required by each claim 1-22 and 24.

As the Timme patent does not disclose each and every element recited in claims 1-22 and 24 of the '560 Application, it is not a proper anticipating reference under 35 U.S.C.§ 102(b). *See Brown*, 265 F.3d at 1351. Therefore, Appellant respectfully requests reversal of the rejection of claims 1-22 and 24 under 35 U.S.C. §102(b).

B. The Wear Indicator Limitations (Group I and II Claims)

Timme also does not disclose limitations relating to the wear indicator as required in all claims 1-22 and 24. Particularly, every claim of the '560 Application requires a wear indicator extending either from a shoulder of a box member or a shoulder of a pin member. The

Timme reference does not disclose or suggest such elements. Instead, the disclosure of Timme is directed to a bench mark formed in a tool joint (i.e. a male or female half of a threaded connection) between the threads and the make-up shoulder. (Timme Abstract, lines 4-6). Figure 4 of the Timme patent is reproduced below:

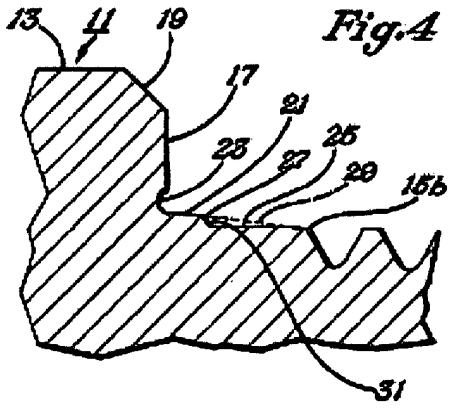

Fig. 4

The bench mark **27** of the Timme patent is located between a threaded region **15b** and a make up shoulder **17**. The purpose of bench mark **27** is to provide a reference point from which the distance to shoulder **17** can be measured. (Timme column 2, lines 55-66). When new, bench mark **27** is preferably machined 1/8" from makeup shoulder **17** and any deviation over time therefrom is indicative of tool joint deformation. (*Id.*) If such deformation exceeds a specified tolerance, the tool joint must be removed from service as it is no longer suitable for continued use. (*Id.*) The bench mark of Timme is neither visible nor capable of being used once the tool joint is made-up (i.e. connected) with a corresponding device and is therefore not useful in indicating the status of a made-up connection.

As such, the disclosure of Timme does not disclose or suggest a wear indicator extending from either a shoulder of a box member or a shoulder of the pin member. Referring to claims 1-22 and 24 of the '560 Application, the bench mark of Timme does not extend from a

shoulder of a box member or a pin member. Therefore, Appellant respectfully asserts the Timme patent does not disclose each and every element recited in claims 1-22 and 24 of the '560 Application and as such, it is not a proper anticipating reference under 35 U.S.C.§102(b). *See Brown*, 265 F.3d at 1351.

The Examiner's Arguments are not Persuasive

The Examiner was not persuaded by Appellant's assertion that the Timme patent does not disclose each and every element of claims 1-22 and 24 and responded with arguments to the contrary. Particularly, in paragraph 5 of the Final Office Action dated May 10, 2004 (and in the previous, non-final Office Action dated November 19, 2003), the Examiner rejected all claims by alleging that "a wear indicator that extends from a shoulder (recess **23** and bevel **19**) of the pin member **11**" is disclosed in Figure 4 of the Timme patent. Next, in paragraph 6 of the Final Office Action, the Examiner proposed the "wear indicator" disclosed in Figure 4 of the Timme patent is the end or edge surface area of element **17** and the "shoulder" is the cross-hatched region of the pin member to the left of beveled edge **19**. Thus, the Examiner took the position that the edge surface area of element **17** projects from a shoulder comprised of recess **23** and beveled edge **19** formed on either side of element **17**. As such, the Examiner's argument is premised upon beveled edge **19** and recess **23** being a "shoulder" and that edge surface area of element **17** is a "wear indicator." Appellant respectfully disagrees with this interpretation of the Timme disclosure and offers the following evidence in support.

Terminology used in the Timme Patent Contradicts the Examiner's Position

First, contrary to the Examiner's Position, the Timme patent consistently and unequivocally refers to item **17** as a "make-up shoulder." Specifically, from column 2, line 22 to

column 3, line 38 of the specification, the Timme patent identifies item **17** ten times as a "make-up shoulder" in reference to Figures 2 and 4 depicting pin connections. So thorough and consistent is this identification, that no recitation of item **17** can be found in the specification without being concurrently identified as a make-up "shoulder." Furthermore, in reference to Figures 3 and 5 depicting box connections, item **39** is used consistently to identify the same structure as a "make-up shoulder." (Timme column 3, lines 1-39). Finally, in describing a prior art pin connection in Figure 1, the specification of the Timme patent recites item **65** to indicate the same structure yet again as a "make-up shoulder." (Timme column 3, line 48). Therefore, the Examiner's position that item **17** is not a shoulder, but instead an extension from a shoulder created by beveled edge **19** and recess **23**, runs squarely counter to the disclosure of the Timme patent.

Second, the Timme patent identifies item **19** as a "bevel" formed between make-up shoulder **17** and cylindrical surface **13** (i.e. the outer profile of the threaded connection). (Timme column 2, lines 26-28). As disclosed in the Timme patent, bevel **19** is not a shoulder, but instead a transitory feature located *between* a shoulder (e.g. **17**) and a cylindrical surface (e.g. **13**). (*Id.*) Therefore, the Examiner's position that bevel **19** *is* a shoulder (or a component of a shoulder) is not supported by the disclosure of the Timme patent.

Third, the Timme patent identifies item **23** as an "annular groove or recess... to avoid a sharp intersection and to provide a make-up shoulder that can be redressed." (Timme column 2, lines 36-40). As disclosed, annular groove **23** is not a shoulder, but instead a feature to prevent a sharp intersection with and to provide access to a shoulder (e.g. **17**). (*Id.*) Presumably, the purpose of annular groove **23** is to reduce the amount of stress concentration at an interface *between* shoulder **17** and threads **15b** and to provide access to shoulder **17** so that it may be

reworked or redressed. Therefore, the Examiner's position that annular groove **23** *is* a shoulder (or a component of a shoulder) is not supported by the disclosure of the Timme patent.

As they are not supported by the disclosure of the cited Timme reference, Appellant respectfully requests that the Board reject the Examiner's interpretation and characterization of the Timme disclosure. Therefore, because the Timme patent does not disclose each and every element recited in claims 1-22 and 24 of the '560 Application, it is not a proper anticipating reference under 35 U.S.C.§102(b). *See Brown*, 265 F.3d at 1351.

Expert Testimony Contradicts the Examiner's Position

Finally, the Appellant submitted a Declaration of Robert S. Sivley, IV (attached hereto as Appendix B) under 37 C.F.R. §1.132 with a response after the Final Office Action. In the Affidavit, Sivley identified himself as one of ordinary skill in the art in that he has worked in the field of threaded connections since 1996 and holds a Texas Professional Engineer's license. (Sivley Affidavit, ¶¶ 2-3). Sivley's testimony is that the *only* shoulder shown in Figure 4 of the Timme patent is that identified by item **17** and that the bevel **18** and recess **23** are not shoulders. (Sivley Affidavit, ¶ 8). It is Mr. Sivley's testimony as one of ordinary skill in the art that the Timme patent does not disclose a wear indicator extending from a shoulder as recited in claims of the '560 Application. *(Id.)*

The Federal Circuit has held that an element of a claim is inherently disclosed in a prior art reference when a person of ordinary skill in the art would recognize its presence. *Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1995). In the present matter, a person of such ordinary (or greater) skill in the art has given testimony that the element of a wear indicator is not present in the reference. As no evidence to contradict the

Sivley Affidavit has been proffered, Appellant respectfully submits the Examiner's position regarding the existence in the Timme patent of a wear indicator extending from a shoulder of a box member or a shoulder of a pin member is untenable. Because the Timme patent does not disclose each and every element recited in claims 1-22 and 24 of the '560 Application, those claims should be allowed. *See Brown*, 265 F.3d at 1351. .

C. The Contact Limitations (Group II Claims)

Timme does not disclose or suggest contact limitations relating to the wear indicator as required in Group II claims 21, 22, and 24 (but not required in Group I claims 1-20). Particularly, claims 21 and 22 require a wear indicator to indicate connection wear by "contact between the wear indicator and the other of the shoulder of the pin member and the shoulder of the box member." (Application claim 21, lines 6-8). Therefore, under claim 21 (and dependant claim 22), it logically follows that there should be no contact between the wear indicator and the shoulder of an adjacent shoulder of a pin or a box member when the connection is not worn. As such, in a new pin-box connection, there should be no contact between the wear indicator and the adjacent shoulder. Similarly, claim 24 requires "the wear indicator does not contact the other of the group consisting of the shoulder of the box member and the shoulder of the pin member, when the connection is first connected" (i.e. when the connection is new and not worn). (Application claim 24, lines 1-3; *See also* Application pages 1-2, ¶ 3). As with claims 21 and 22 above, claim 24 requires that there be no contact between the wear indicator and an adjacent shoulder when the connection is new and not worn. Appellant respectfully asserts that as Timme patent does not disclose or suggest these requirements as claimed, rejection of claims 21, 22, and 24 under 35 U.S.C. §102 is improper. *See Brown*, 265 F.3d at 1351.

As mentioned above in reference to the wear indicator limitations, the Timme patent describes item **17** consistently as a "make-up shoulder." In the Background of the Invention, the Timme patent states:

> [a] make-up shoulder is spaced a selected distance from the gage point of the threads on the pin. Another make-up shoulder is located at the outer end of the box. When fully made-up, these make-up shoulders contact each other under a selected amount of compression to provide a fluid tight seal.

(Timme column 1, lines 14-20). The tool joints disclosed in Timme are rotary "API" taper-threaded connections wherein adjacent shoulders of pin and box components meet in compression upon make-up, *i.e.*, connection, of the tool joint to form a hydraulic seal therebetween. (*Id.*) As such, the faces of make-up shoulders **17**, **39**, and **65** are necessarily smooth, uniform, and without obstructions in order to facilitate seal integrity. (Timme column 1, lines 25-26).

In contrast, the threaded connections claimed the '560 Application rely on the wedge thread profiles upon and within the pin and box members to establish a fluid tight seal therebetween. (Application page 2, ¶ 4). As such, the threaded connections of the '560 Application are constructed such that the shoulders thereof do *not* contact one another absent excessive wear in the connections. (Application pages 1-2, ¶ 3). Therefore, the Examiner's characterization of item **17** of the Timme patent as a wear indicator projecting from a shoulder created by bevel **19** and recess **23** would not be capable of anticipating claims 21, 22, and 24 even if such characterization were deemed valid. The meeting of item **17** with shoulder **39** of Figures 3 and 5 every time a connection is made up is contrary to the limitations of claims 21, 22, and 24. Because each and every limitation of claims 21, 22, and 24 is not disclosed in the

Timme patent, anticipation thereby under 35 U.S.C. §102 is improper. *See Brown*, 265 F.3d at 1351. As such, the Appellant respectfully requests the Board reverse the Examiner's rejection and allow claims 21, 22, and 23.

D. Lack of Obviousness

While no rejection under 35 U.S.C. §103 currently stands before the Board, in the interest of expediting prosecution of the pending claims, Appellant takes this opportunity to note that the claims of the '560 Application are also not obvious in view of the Timme patent. The heart of the statutory test of obviousness is found in the first sentence of 35 U.S.C. § 103, which denies patentability:

> [I]f the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

A conclusion of obviousness may be established on the basis of one or more prior art references. Before a conclusion of obviousness may be made based on a combination of references, however, there must have been a reason, suggestion, or motivation to combine the teachings of those references. *See ACS Hosp. Sys. Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984). The suggestion may come from the nature of a problem to be solved, leading inventors to look to references relating to possible solutions for that problem. *See, e.g.*, *In re Rinehart*, 531 F.2d 1048, 1054 (C.C.P.A. 1976).

In the present case, the Timme patent not only does not teach, but actually teaches away from the invention as claimed. Particularly, with regard to the wear indicator required in every claim of the '560 Application, the Timme patent teaches a bench mark to be made on

portions of the pin and box connections that are not visible upon make-up of the components in the field. As such, the Timme patent does not teach a wear indicator useful in determining the state of the connection when it is assembled and torqued. The wear indicator of the '560 Application is premised upon identifying the wear state of tubulars in a connected state. (Application pages 5-6, ¶ 18).

Moreover, the Timme patent teaches away from the invention as claimed in the '560 Application. As mentioned above in reference to the contact limitations of claims 21, 22, and 24, the Timme patent teaches threaded connection systems whereby shoulders of adjacent pin and box members *must* meet in compression to create a fluid tight seal therebetween. (Timme column 1, lines 14-20). In contrast, the wear indicators of the '560 application are premised upon types of connections whereby shoulders of adjacent pin and box members do not meet unless worn. (Application pages 1-2, ¶ 3). As a result, the disclosure of the Timme patent teaches away from the invention as disclosed and claimed in the '560 Application and a rejection under 35 U.S.C. 103(a) by Timme would be improper. *See In re Bell*, 991 F.2d 781, 784 (Fed. Cir 1993).

IX. Conclusion

For the reasons presented above, Group I claims 1-20 of the '560 Application are patentable over the cited art as Timme does not disclose all of the limitations recited therein. *See Brown*, 265 F.3d at 1351. Furthermore, Group II claims 21, 22, and 24 of the '560 Application are patentable over the cited art as Timme does not disclose all of the limitations recited therein. (*See id.*) Therefore, the Appellant respectfully requests that the Board reverse the Examiner's rejections and allow all pending claims 1-22, and 24 of the '560 Application.

Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference No. 09432/168002).

Respectfully submitted,

Date: _____

_____

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Appendix A

Claims of Record in the Application

1. A threaded pipe connection comprising:

a pin member having external threads increasing in width in one direction;

a box member having internal threads increasing in width in an opposite direction so that the internal threads and the external threads move into engagement upon make-up of the connection; and

a wear indicator that extends from at least one of the group consisting of a shoulder of the box member and a shoulder of the pin member.

2. The threaded pipe connection of claim 1 wherein the wear indicator is disposed on the pin member.

3. The threaded pipe connection of claim 1 wherein the wear indicator is disposed on the box member.

4. The threaded pipe connection of claim 1 wherein the shoulder of the pin member comprises an external shoulder of the pin member and the wear indicator is disposed on the external shoulder of the pin member.

5. The threaded pipe connection of claim 1 wherein the shoulder of the box member comprises an external shoulder of the box member and the wear indicator is disposed on the external shoulder of the box member.

6. The threaded pipe connection of claim 1 wherein the shoulder of the pin member comprises an internal shoulder of the pin member and the wear indicator is disposed on the internal shoulder of the pin member.

7. The threaded pipe connection of claim 1 wherein the shoulder of the box member comprises an internal shoulder of the box member and the wear indicator is disposed on the internal shoulder of the box member.

8. The threaded connection of claim 1 wherein:
the pin member has an external shoulder;
the box member has an external shoulder; and
the wear indicator extends from the external shoulder of the pin member and the external shoulder of the box member.

9. The threaded connection of claim 1 wherein:
the pin member has an internal shoulder;
the box member has an internal shoulder; and
the wear indicator extends from the internal shoulder of the pin member and the internal shoulder of the box member.

10. A method of manufacturing a connection wear indicator, comprising:
providing a pin member having external threads increasing in width in one direction;
providing a box member having internal threads increasing in width in an opposite direction so that the internal threads and the external threads move into engagement upon make-up of the connection; and
providing a wear indicator for the connection that extends from at least one of the group consisting of a shoulder of the box member and a shoulder of the pin member.

11. The method of claim 10 further comprising:
disposing the wear indicator on the pin member.

12. The method of claim 10 further comprising:
disposing the wear indicator on the box member.

13. The method of claim 10 wherein the shoulder of the pin member comprises an external shoulder of the pin member, the method further comprising:
disposing the wear indicator on the external shoulder of the pin member.

14. The method of claim 10 wherein the shoulder of the box member comprises an external shoulder of the box member, the method further comprising:
disposing the wear indicator on the external shoulder of the box member.

15. The method of claim 10 wherein the shoulder of the pin member comprises an internal shoulder of the pin member, the method further comprising:

disposing the wear indicator on the internal shoulder of the pin member.

16. The method of claim 10 wherein the shoulder of the box member comprises an internal shoulder of the box member, the method further comprising:

disposing the wear indicator on the internal shoulder of the box member.

17. The method of claim 10 wherein the shoulder of the box member comprises an external shoulder of the box member and the shoulder of the pin member comprises an external shoulder of the pin member, the method further comprising:

disposing the wear indicator on at least one of the external shoulder of the pin member and the external shoulder of the box member.

18. The method of claim 10 wherein the shoulder of the box member comprises an internal shoulder of the box member and the shoulder of the pin member comprises an internal shoulder of the pin member, the method further comprising:

disposing the wear indicator on at least one of the internal shoulder of the pin member and the internal shoulder of the box member.

19. A threaded pipe connection comprising:

a pin member having external threads increasing in one direction;

a box member having internal threads increasing in an opposite direction so that the internal threads and the external threads move into engagement upon make-up of the connection; and

means for indicating connection wear.

20. The threaded pipe connection of claim 1, wherein wear indicator comprises a circumferential extension.

21. A threaded pipe connection comprising:

a pin member having external threads increasing in width in one direction;

a box member having internal threads increasing in width in an opposite direction so that the internal threads and the external threads move into engagement upon make-up of the connection; and

a wear indicator that extends from a shoulder of the connection, wherein connection wear is indicated by contact between the wear indicator and the other of the shoulder of the pin member and the shoulder of the box member.

22. The threaded pipe connection of claim 21, wherein the wear indicator extends from at least one of the group consisting of a shoulder of the box member and a shoulder of the pin member.

23. Cancelled

24. The threaded pipe connection of claim 1, wherein the wear indicator does not contact the other of the group consisting of the shoulder of the box member and the shoulder of the pin member, when the connection is first connected.

Appendix B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	David L. Mallis	Art Unit :	3729
Serial No.:	09/843,560	Examiner :	D. Tugbang
Filed :	April 26, 2001		
Title :	TUBULAR JOINT WEAR INDICATOR		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Declaration of Robert S. Sivley, IV Under 37 CFR § 1.132

I, Robert S. Sivley, IV, hereby declare that:

1. I received a Bachelor's Degree in Mechanical Engineering from the Cullen College of Engineering at the University of Houston in 1996.

2. I have worked in the field of Mechanical Engineering for seven years. Since 1996, I have been involved in the design and development of threaded connections.

3. I am licensed to practice mechanical Engineering in the state of Texas. My license number is 92958. It expires on 09/30/2004.

4. I am familiar with the above referenced patent application, and have reviewed the Examiner's rejections.

5. I am currently employed by Hydril Company, Inc.

6. I am not an inventor of the invention that is the subject of the present application.

7. A "shoulder," as the term is used in the art of threaded connections, refers to a device that prevents further relative rotation between two threaded members when the members are made up. One example of a shoulder is a positive stop shoulder, which is where a shoulder element on the pin member comes into contact with a shoulder element on the

box member. The contact between the shoulder elements prevents any further relative rotation between the two members. Another type of shoulder is a thread shoulder, where contact between the flanks of the threads prevents further relative rotation of the members. Any part of a threaded connection that does not prevent further relative rotation between the members is not a shoulder, as that term is used in the art.

8. As I understand the rejection, the Examiner considers element 17 in FIG. 4 of U.S. Patent No. 4,438,953 ("Timme") to be a wear indicator and surfaces 19 and 23 to be a shoulder. In my opinion, the only shoulder shown in FIG. 4 of Timme is shown at element 17. The surfaces 19, 23 shown in FIG. 4 of Timme are not shoulders because they do not prevent relative axial movement between the members of the threaded connection. Thus, Timme does not show a wear indicator that extends from a shoulder, as recited by the claims in the present application.

I further declare that all statements made herein of my own knowledge are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

Date: Robert A. Lafferty P.E. 07/23/04

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